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# UHC Charter Expert Papers

TOPIC OF FOCUS

UHC must have first and foremost the right  
human resources.

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# UHC must have first and foremost the right human resources

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This paper reviews the critical importance of human resources for health (HRH) within the context of working to strengthen health systems toward universal health coverage (UHC). The goal of the paper is to underpin Precept #9 of the Global UHC Charter. It is not meant to provide national level policy guidance for HRH planning toward UHC. Instead, we position HRH's pivotal role in making the health systems strengthening (HSS) agenda more visible and then highlight HRH's contributions to the burgeoning UHC movement. This is followed by a summary of the labor economics that shape the density and composition of HRH as countries move up the development ladder, a rather dynamic and adaptive process in labor markets requiring careful planning and no simple replication of older models or static density thresholds. The paper includes a section on the professional education for HRH in the 21<sup>st</sup> century and several case studies that illustrate different approaches to HRH planning and their impact on HSS and ultimately UHC. We conclude by offering key recommendations.

## **'Human Resources for Health' are paramount to the UHC movement**

A critical challenge to achieving UHC in many countries is the chronic and severe shortage of health professionals and competencies, and of adequate stewardship capacity to address it. Health workers are the brains, heart and hands of the health system. They are comprised of "all people engaged in actions whose primary intent is to enhance health" at any level of the health system (e.g. doctors, nurses, dentists, pharmacists, midwives, community health workers, etc.).<sup>1</sup> While clinicians often lead reforms to expand coverage, medical associations at times may also oppose them.<sup>2</sup> They also include the professionals who steward the health system and its reforms and those who operate behind the front line (e.g. researchers, managers, social workers, advocates, etc.). In fact, as countries progress up the development ladder, the number of HRH in the latter cohorts eventually surpasses those who provide direct patient care. Other HRH are those champions who have led resolutions, political declarations and joint strategies that have resulted in building momentum for a movement of committed citizens, politicians and academicians who are working at both global and national levels to illuminate the critical nature of HRH in the quest toward UHC. Professional associations are powerful lobbies for (or against) health reform. Bluntly stated, without health workers there would be no health system and no hope for achieving UHC in the 21st Century.

The road toward a policy shift of using a broader health systems approach to global health challenges began with the 2000 World Health Report - *health systems: improving performance*. Although it was an influential report, it failed to galvanize support for this systems level approach. At the same time, The Millennium Development Goals (MDGs) were organized around disease and mortality outcomes, as opposed to being organized from a HSS perspective. Then, in 2003 the 'Joint Learning Initiative on HRH' (JLI) successfully illustrated the critical nature of HRH in achieving better health outcomes, while making visible the health systems approach.<sup>3</sup> Further confirming the JLI's message was the 2006 World Health Report - *Working Together for Health*, which put HRH firmly onto the global health agenda.<sup>1</sup> In order to act on the recommendations from this Report, WHO created a dedicated Department for HRH and a new partnership, The Global Health Workforce Alliance (GHWA), which spearheaded a global movement for HRH. Further, in 2007 WHO introduced a framework for health systems that included six simple building blocks: governance, information, financing, human resources, technology, and services.<sup>4</sup> WHO began supporting the collection and generation of data to ensure informed decision-making in the burgeoning field of HRH, which became fully endorsed by and integrated into the global health community's discourse.

## The Global landscape of HRH

Globally, WHO estimates there are over 60 million health workers: approximately 10 million doctors, 25 million nurse/midwives and 15 million 'other' cadres (most of whom reside in poorer countries and are informal, private, faith-based or community-based providers). The ratio of nurses to doctors ranges from nearly 8:1 in the African Region to 1.5:1 in the Western Pacific Region. Typically, more than 70% of doctors are male and similarly more than 70% of nurses are female. In addition to a shortage of frontline providers, there is a dire shortage of public health specialists and health care managers in most countries.

The density and skill-mix of HRH varies across regions (see subsequent maps in this paper) and there is a near universal urban-rural maldistribution. Latin America and the former Soviet countries have good HRH densities, with a relatively high doctor/nurse ratio. Africa has the lowest density of HRH, where the shortfall is significant for both doctors and nurses. Although the OECD countries enjoy high densities of HRH, they do so in large part by recruiting workers from other countries. The density of providers in Asia varies greatly by region, and there are countries that produce enough health workers for export (e.g. Cuba, Philippines, India) which sometimes is called *brain drain*.<sup>5</sup>

A recent model projects that by 2030 the global demand for health workers will rise to 80 million, which is double the current (2013) stock of health workers. Meanwhile, the supply of health workers is expected to reach only 65 million over the same period, resulting in a worldwide net shortage of 15 million health workers.

Following on the data and political momentum built on HRH and HSS, the WHO and GHWA began to organize seminal conferences to convene scientists and policy makers on the topic. This series of conferences served to build wide-scale recognition of the importance of HSS in the global health arena, and ultimately produced a Global Strategy on HRH for 2030.<sup>6</sup> In 2008 at the G8's Hokkaido Toyako Summit, a technical track on HSS was developed which highlighted the importance of HRH. Subsequently, at The Prince Mahidol Award Conference the ambitious concept of UHC was debated and crystallized. During this time, the importance of front-line health workers was recognized, as was the crucial role of nurses in the health system. This was reflected in the 2010 World Health Report - *on the path to UHC*, which focused on health systems financing, but firmly recognized the central importance of HRH to deliver UHC.<sup>7</sup>

Although almost 20 years in the making, the critical role of HRH in working toward UHC is well established and as such is reflected in the health targets of the Sustainable Development Goals 2030. Further confirming this, at the 2017 Universal Health Coverage Forum in Tokyo Japan, the international development community – including both bilateral and multi-laterals – committed to the Partnership for UHC by 2030 (UHC2030).<sup>8</sup>

In parallel, the HRH movement has been growing at the national level. For example, in Mexico, Turkey, Thailand and elsewhere, doctors, nurses and public health advocates have worked as both champions and transformative leaders for UHC, as their countries go through pivotal economic and political change. All around the world, health workers have played essential roles in local movements for UHC. Another poignant example is the American Medical Association's endorsement of the Affordable Care Act ('Obamacare'), which was a sharp turn from their

opposition to UHC in the 1960s when it was viewed as ‘socialized medicine.’ History also shows that the leadership and motivation for health reform often comes from outside the health sector. This was the case with the proto-archetype for UHC in the social protection reforms of Bismarck’s Germany, where large political forces were at play. More recent health reforms in Ghana were led by a legislator who was not a health professional, but who chose to champion UHC for political reasons. Similarly, the President of post-genocide Rwanda successfully implemented a strategy for UHC through “*Mutuelles*”. This rich diversity of experience, while not a blueprint, serves to inspire and illuminate plans for action toward UHC in all countries, regardless of their level of economic development, and is buttressed by a strong and growing global movement on the topic.

## **The economic transition of health shapes HRH programs and policies**

After a golden era with unprecedented progress to reduce infant mortality and AIDS, life expectancy is surging, including in what was formerly referred to as the ‘developing world’.<sup>9</sup> This is causing a shift away from preventing mortality and toward a focus on addressing aging populations, non-communicable diseases, new pandemic threats and promoting physical and mental wellbeing while ensuring social protection. In Europe and North America this epidemiological transition instigated the birth of new medical specialties and sub-specialties, with growing accreditation and licensing bodies and self-regulating professional boards. An equivalent phenomenon is unfolding in the rest of the world, as a result of these demographic and epidemiological transitions.

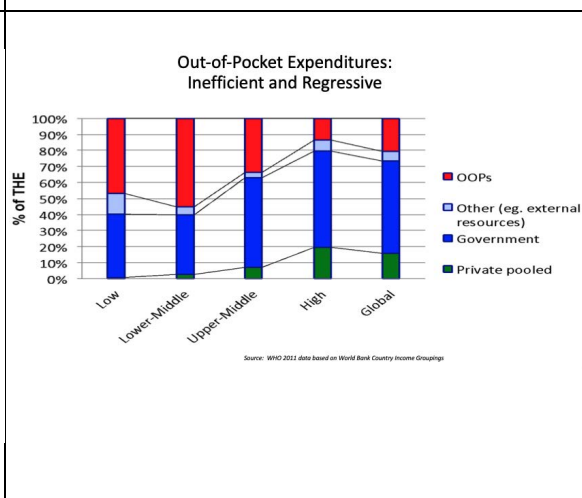
Global health is advancing past the stage of development assistance and into a new era of country ownership and global cooperation.<sup>10</sup> At the national level, the economic transition of health and growing political demands for social protection have created conditions favorable for domestic resource mobilization and universal health coverage with new forms of private-sector engagement. At the global level, development assistance has refocused on fragile states, the poorest communities, and global public goods like health security, normativity, and innovation.<sup>3</sup> The implications of these changes are huge, not only for global health professionals but for all HRH in every country.<sup>11</sup>

The ‘*first law of health economics*’ posits that at the national level, total health expenditures (THE) increase in parallel with a growing economy, as measured by its gross domestic product GDP. As shown in figure 1, this ecologic correlation is close to 90%, was first documented in OECD countries, and more recently has been observed in all countries undertaking national health accounts.<sup>12</sup> In fact, THE grows slightly faster than the GDP - a phenomenon referred to by economists as the ‘*income elasticity of demand*’. Meaning, THE consumes a growing proportion of economies as they grow. Specifically, THE is 2-3% of GDP in low-income countries, 5-7% in middle-income countries and over 10% in high-income nations (approaching 20% in the U.S.A.)<sup>13</sup>

**Fig 1. THE closely correlated with national GDP**



**Fig. 2. THE often grows as OOP spending**



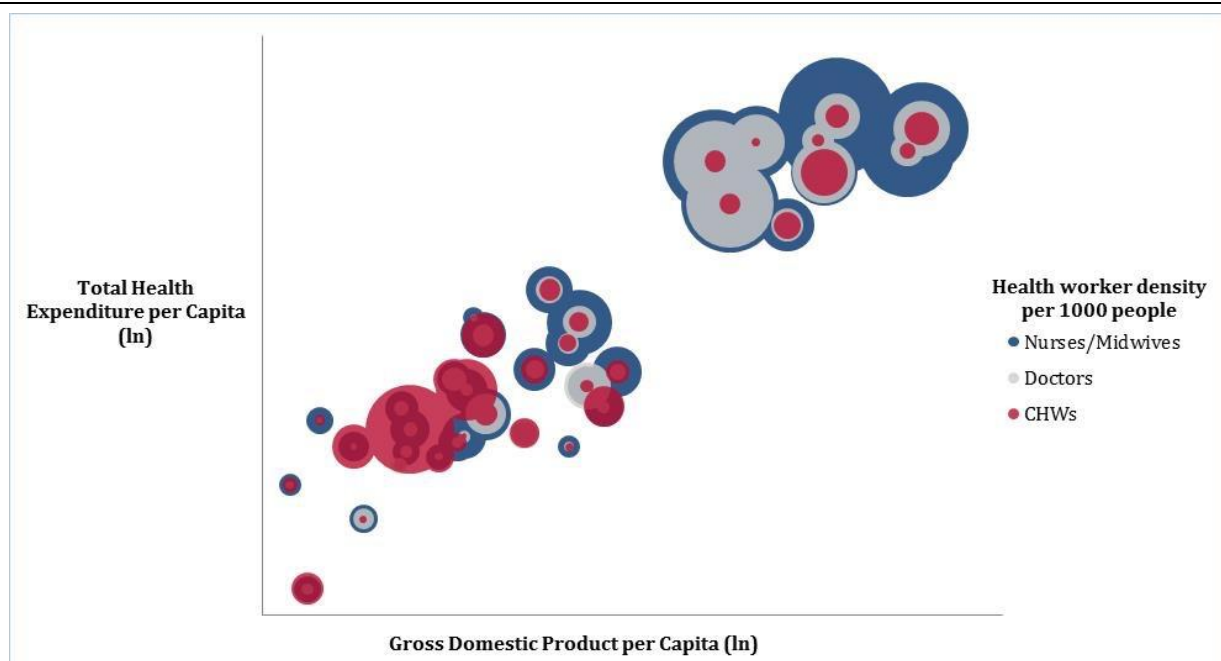
While the unstoppable growth in THE has become a fiscal challenge for richer countries, for lower income countries such growth means having sufficient resources to provide essential health services to the population, a phenomenon referred to as ‘the economic transition of health’.<sup>9,14</sup> It is this economic transition that prompts and allows countries to move toward UHC.<sup>15</sup> Although low-income countries struggle to increase their budgets fast enough to meet the growing demand for health services, they tend to exhaust their budgets on HRH salaries (typically 60%). As a result, there is often an explosion of unregulated private providers of mixed quality, paid for out-of-pocket (accounting for 50-80% of the THE).<sup>16</sup> This type of financing is inefficient and regressive, and leads to catastrophic health expenditures that impoverish over 100 million families globally every year.<sup>17</sup> While most countries eventually organize their health system through public (or private) pooled financing, by the time they reach upper middle-income status, the delay in doing so has already condemned an entire generation to a dysfunctional and inequitable health system. In this scenario, a large proportion of HRH has become private and often biased towards specialized medical services in urban centers, which can hinder subsequent reforms towards UHC.

The economic transition of health for countries moving up the development ladder has significant implications for HRH. We already noted the economic transition is typically preceded by a demographic transition and accompanied by an epidemiological transition. Those changes bring a shift in the burden of disease towards non-communicable diseases and non-lethal problems that negatively affect quality of life such as depression, back pain and age-related sensory deficits.<sup>18</sup> The economic transition affects planning for HRH because resources, skills, needs and social demands change as countries move up the development ladder. For example, over the next decade, an increasing number of African and Asian countries will be able to finance a package of basic health services from domestic resources and will subsequently face decisions on how to invest these funds to maximize stock, skill-mix, distribution and productivity of the HRH workforce.<sup>19</sup>

This economic transition of health will also bring greater demand by urban elites for tertiary care. In the absence of sound health system stewardship, this will lead to increasing specialization and urban hospitals.<sup>20</sup> This social arrangement distorts overall financing for primary care for all; recently, the distortion has proven to be challenging for the government of Nigeria where 60% of the health budget was consumed by city hospitals, although their stated priority was primary health. Such problems are compounded by dual-practice in the private sector, often accompanied by ghost workers in public clinics.<sup>21</sup> This is a reflection of public sector under-payment and poor working conditions, as well as the individual entrepreneur health professional. Early monitoring and planning can attenuate these problems as illustrated below in Thailand's case study.

Community health workers (CHW) are the most cost-effective way to deliver basic services and they are a prominent HRH cadre in low-income countries (formal and informal). Many great examples of CHWs have been reviewed, including those from Ethiopia (see case study), the "bare foot doctors" of Mao's China, BRAC's *Shasta Shebikas* in Bangladesh and the Accredited Social Health Activists (ASHAs) of India. In middle income countries nurses and midwives play a prominent role and in upper-middle income nations medical doctors are more ubiquitous, as shown in the figure below. However, nurses remain the largest cadre of health workers.

**Fig. 3. HRH skill mix and density with the economic transition (each bubble a country)**



The figure shows countries' progressive change in the density and skill-mix of HRH that accompanies increases in GDP. The large red circle in the lower left quadrant shows how India, with relatively low income and health spending, has trained and deployed a large number of community health workers or "Accredited Social Health Activists (ASHAs)" to provide essential services. The JLI demonstrated higher HRH density is associated with lower maternal and infant mortality.<sup>3</sup> A recent example of this inverse relationship between the density of HRH and health outcomes is the spread of Ebola in West Africa. These data illustrate that HRH are essential to a healthy population. Likewise, countries with insufficient HRH have significantly worse health. This was recognized as long ago as 40 years at a meeting in Alma Atta, which sparked the innovative 'Health for All' movement.

## **Labor economics and HRH**

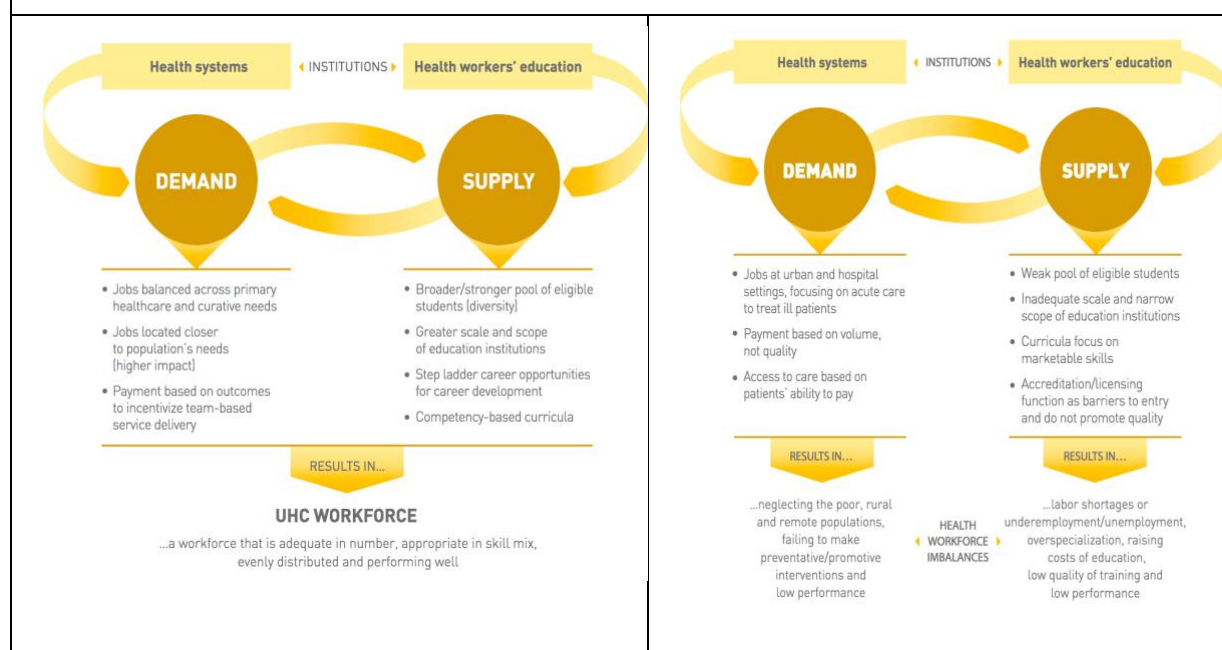
Health care is a labor-intensive service and health workers are essential to its function, its *sine qua non*, its *raison d'être*. Computers, the internet and smart phones have enhanced communications and downsized many sectors, but both health spending and the density of health workers have grown steadily and accounting for increasing proportions of ever larger economies. Labor markets govern the balance between the supply and demand of health workers.<sup>22</sup> As national economies grow, the demand for health services and wellbeing appears to be infinite. This causes disproportionate growth in health spending, which countries tend to struggle with.

Initial responses to address increasing demand for health services, especially in Africa, were to create and deploy additional health cadres, which is often referred to as "pumping the supply." This strategy is complicated by the lag time of the professional development pipeline and by changing levels of economic development. Furthermore, because these strategies tended to be overly simplistic and short-sighted, when a country successfully pumps up the supply of doctors and nurses, without proper HRH planning, these additional workers may end up unemployed, sub-employed (engaged in other businesses) or migrating to countries that are more economically developed. Another common scenario with pumping the supply is overstaffing in urban hospitals which creates inefficiency in health care system. The political, human and sustainability challenges that are grounded in labor and development economics were initially ignored, and as such this approach was not as successful as was originally anticipated.

Although the supply of HRH was originally viewed as the primary challenge in HRH, the demand for and distribution of HRH are equally challenging for planners, especially as countries work in the progressive realization of UHC. Examples of these 'demand-side' issues include when doctors and nurses are unwilling to practice exclusively in primary care or work in remote rural areas where there is no social livelihood for their families or professional development opportunities. Or when professional associations, with both vested interest and legitimate concerns about quality and safety, place restrictions on the much-needed clinical 'task shifting' by nurses and community health workers. The following are the key supply- and demand-side challenges that countries must address as they go through the economic transition of health.

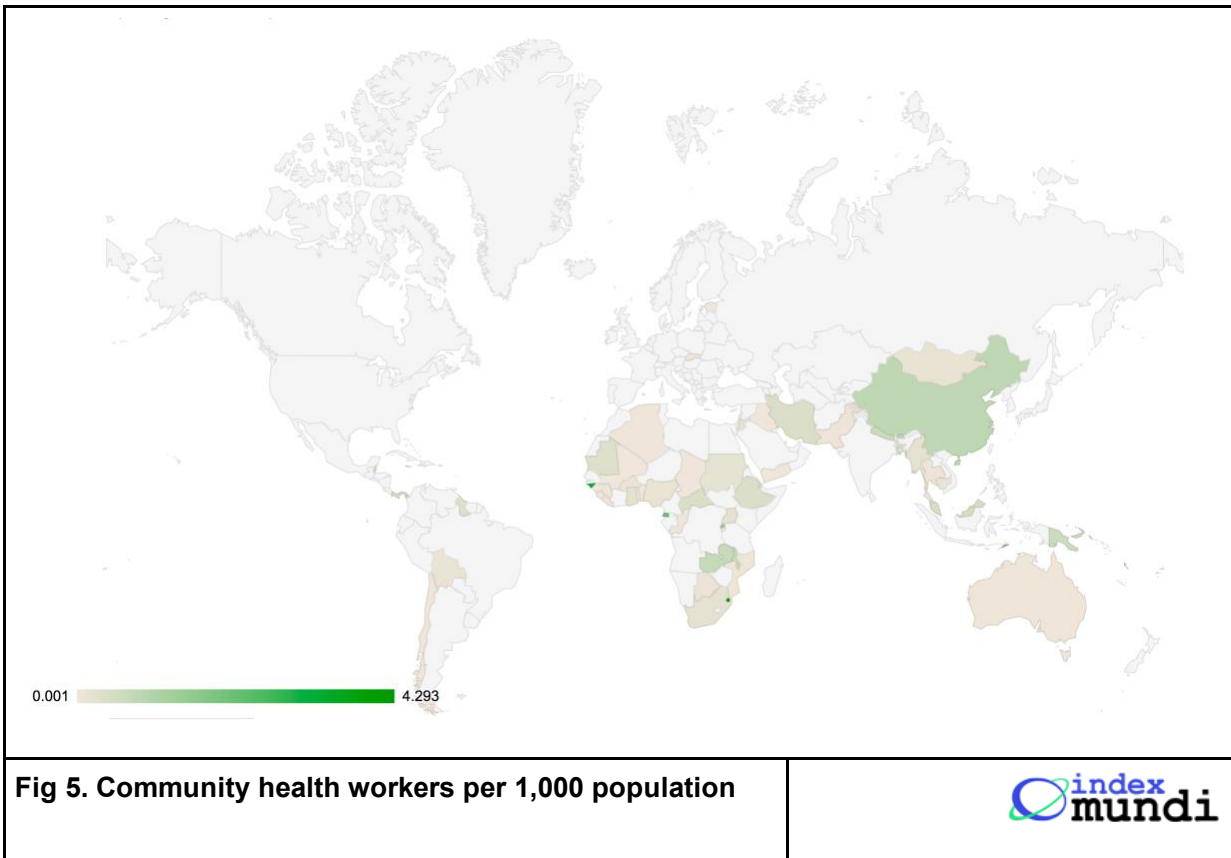


**Fig. 4. Demand and supply of health workers with and without UHC.**



The ILO's minimum threshold of health worker availability, rooted in UHC and social protection goals and using a rather static lens, is 4.1 per 1000 population but most countries fall short. This shortfall is projected to be rectified partially by the global economy, which is estimated to create 40 million new health sector jobs by 2030. However, these will be mostly in middle and high-income countries, for which there will remain a projected shortage of 18 million health workers. Initial attention to HRH in low-income countries focused on worker shortages whereby countries responded by increasing education and training opportunities in order to increase the number of providers. Further, there were World Health Assembly resolutions that attempted to curtail the 'brain drain' by calling for restraint through a code of ethical recruitment. Transnational economic gradients and individual rights to migrate invite more nuanced approaches to both the level and types of health workers educated, as well as evidence-based regulatory frameworks and policies for migration and compensation of such workers.

Building an effective health workforce is a critical component to investing in health and can be a highly cost-effective public health and social strategy. Investing in health yields great social and economic returns.<sup>4</sup> More broadly, health care employment has a significant growth-inducing effect on other sectors and has the potential to be a driver for socioeconomic development at large, including gender equality and equitable access to education.<sup>13</sup>



While the linear and fragmented approach of focusing on the supply of HRH appeared to be a logical solution, the impact has been rather insignificant. This is due in part to the growing global demand for health workers, the economic and social gradients within and between countries, and the freedom of individuals to migrate. By 2030, low-income countries are expected to face a substantial and widening mismatch between the demand for health workers to respond to the public health and medical needs of their population, and the country's capacity to train, employ, deploy and retain health workers.<sup>22</sup> As noted earlier, community health workers are the most efficient way to deliver basic services. For instance, investing in midwifery education, with employment in community-based services, could yield a 16-fold return on investment in terms of lives saved and cost of caesarean sections avoided. CHWs are also less likely to migrate to richer countries and are more willing to live and work in the rural communities where they were born and raised. The success of using CHWs is illustrated in a seminal paper and subsequent book, titled "Good Health at Low Cost,"<sup>23</sup> that provide examples from low-income countries such as Sri Lanka, Bangladesh, Costa Rica and China where government commitment and community solidarity resulted in equitable delivery of primary health care. *In low-income countries, UHC can only be realized by using locally trained CHWs to deliver basic PHC and other essential population-level interventions, while building a range of cadres for diverse and evolving health needs.*

***Ethiopia – a low-income country providing universal access to PHC***

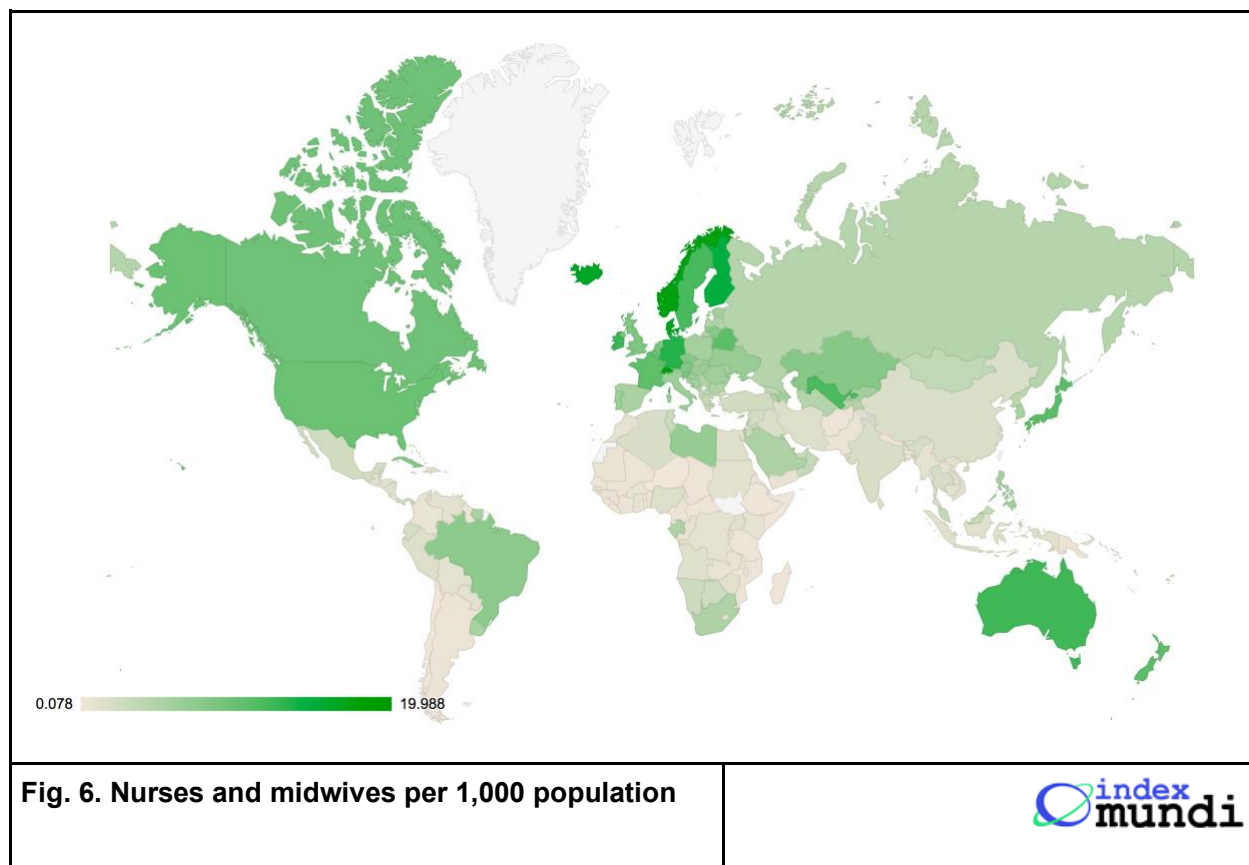
Despite Ethiopia being one of the poorest countries in the world, they were able to use their scarce resources to mobilize HRH and provide basic health services to all. Now Ethiopia is one of the five fastest growing economies in the world and is on the verge of reaching middle-income status. In the last twenty years, major health sector reforms have resulted in some of the strongest improvements in health in Africa, in both rural and urban areas, and in achieving the MDGs ahead of schedule. This was made possible by strong political commitment to health equity, synergy with financial reforms and fast-growing domestic economies.

The centerpiece of Ethiopia's HRH revolutionary plan was the 'Health Extension Program' (HEP). HEP was introduced in 2005 in an effort to scale-up their primary health care system and focus on rural areas. One unique and identifying aspect of the program was that health workers were paid workers, as opposed to a previous reliance on volunteers. Health Extension Workers (HEWs) are mostly women and are recruited on the basis that they: reside in the village, speak the local language, have completed 10th grade, and commit to return to the village to work after their MOH training. Because the HEP employed hundreds of new workers, the active recruitment of women also helped to reverse the gender imbalance in the formal labor market. HEWs receive regular performance-based evaluations and ongoing training - a subset become registered nurses and advance through the civil service ranks. Lastly, an institutionalized management structure was essential to the success of engaging and retaining this massive health workforce.

After five years of the HEP Ethiopia's human resources for health doubled, which enabled the deployment of more than 34,000 HEWs. This has played a large role in the HEP which has enabled Ethiopia to increase primary health care coverage from 76 percent in 2005 to 90 percent by 2010. The Ministry of Health, in parallel, expanded the number of district and regional health centers and hospitals. More recently, and with a view to a future middle-class economy and growing demand for health services, Ethiopia has expanded the number of medical schools has rocketed from 6 to 33 since last decade; they will need to ensure the quality of education and invest to ensure an efficient and equitable HRH system. In parallel, the Government of Ethiopia is rolling out a community-based health insurance program to supplement and pool public budgets as they pursue UHC.

In middle-income countries where the demand of HRH continues to increase, HRH planning and management becomes more complex.<sup>24</sup> These 'demand-side' issues include: strategic deployment, incentivizing (financial and others) and retaining of health workers, which are implemented by both public and private entities. If these issues are ignored, the result tends to include: high attrition, poor morale and low performance, all of which have been linked to poor quality of care. In addition, if the demand side aspects of HRH aren't addressed, health workers tend to rely on alternative remuneration strategies such as collecting out-of-pocket payments

(often under the table) or seeking additional employment in private practice.<sup>10</sup> The case studies from Japan and Thailand illustrate demand-side strategies for incentivizing doctors to practice primary care in rural areas.



A special facet of the HRH 'supply-side' challenge is the limited institutional capacity within most HRH units of Ministries of Health. This represents a massive shortfall of HRH strategic planning. Many ministries lack the training and the longer-term vision required to develop strategies for public-private production, deployment, retention and migration. Nor do they have the time to translate such strategies into effective HRH planning that can mobilize resources at a time when donor resources for health are dwindling.<sup>25</sup> HRH strategies intersect with economic trajectory, education policy, employment conditions, labor laws and private sector regulations. The result is a *de facto* expansion, without policy guidance or regulatory framework, in private schools and services.<sup>22</sup> HRH strategies for UHC require a long-term perspective, steady leadership and collaboration across ministries and sectors. *We contend that the capacity for health systems stewardship (governance, information, financing and HRH) is insufficient and that developing such capacity for leaders and stewards of HRH should be a priority for governments, international donors and technical agencies working to advance UHC in middle-income countries.*

### **The case of Thailand – a model middle income country and UHC champion**

Although Thailand only recently became a middle-income country, it has been a model for UHC for many years. In spite of the economic crisis of 1987 and because of it, the government prioritized the geographically equitable expansion of their health system with the goal of UHC in 20 years. Thailand instituted policies to strengthen the primary health care system by improving: geographical access to health services, health infrastructure at the district level, availability of essential medicines and by developing an appropriately trained health workforce comprised of people willing to be stationed in rural areas.

Thailand instituted a series of policies to train nurses and doctors with an explicit contract that upon graduation they must work in rural areas. Candidates were selected from rural areas and provided free education and training; graduates were obligated to work in a rural area for several years or risk a fine. This policy increased the supply of health workers and also helped to ensure adequate HRH in rural areas. Another strength of the Thai health system is the high ratio of nurses to physicians, enriched by a 'laddered' system whereby minimally trained nurses work for a few years and then return to school to complete a bachelor's degree.

In addition to receiving an education, salary and per diem, graduates from both programs received additional financial incentives for their rural service. There were also non-financial incentives in the form of professional career development and annual awards that became highly regarded within the community. Further, in the early 1990s in reaction to an internal brain drain from the public to private sector, an additional allowance was given to those doctors who chose to remain in the public sector.

Thailand has 19 medical schools, 11 of which are in rural areas. These schools played a significant role in producing doctors for service in rural areas. The number of physicians increased from 8,000 in 1985 to 35,000 in 2009 – a fourfold increase in 24 years. Similarly, nursing schools have increased in number from 39 in 1976 to 80 in 2009, producing a 3.3-fold increase in nurses during the same period. At the same time, policy think tanks like the International Health Policy Program were established to provide analytical capacity to the Ministry of Health.

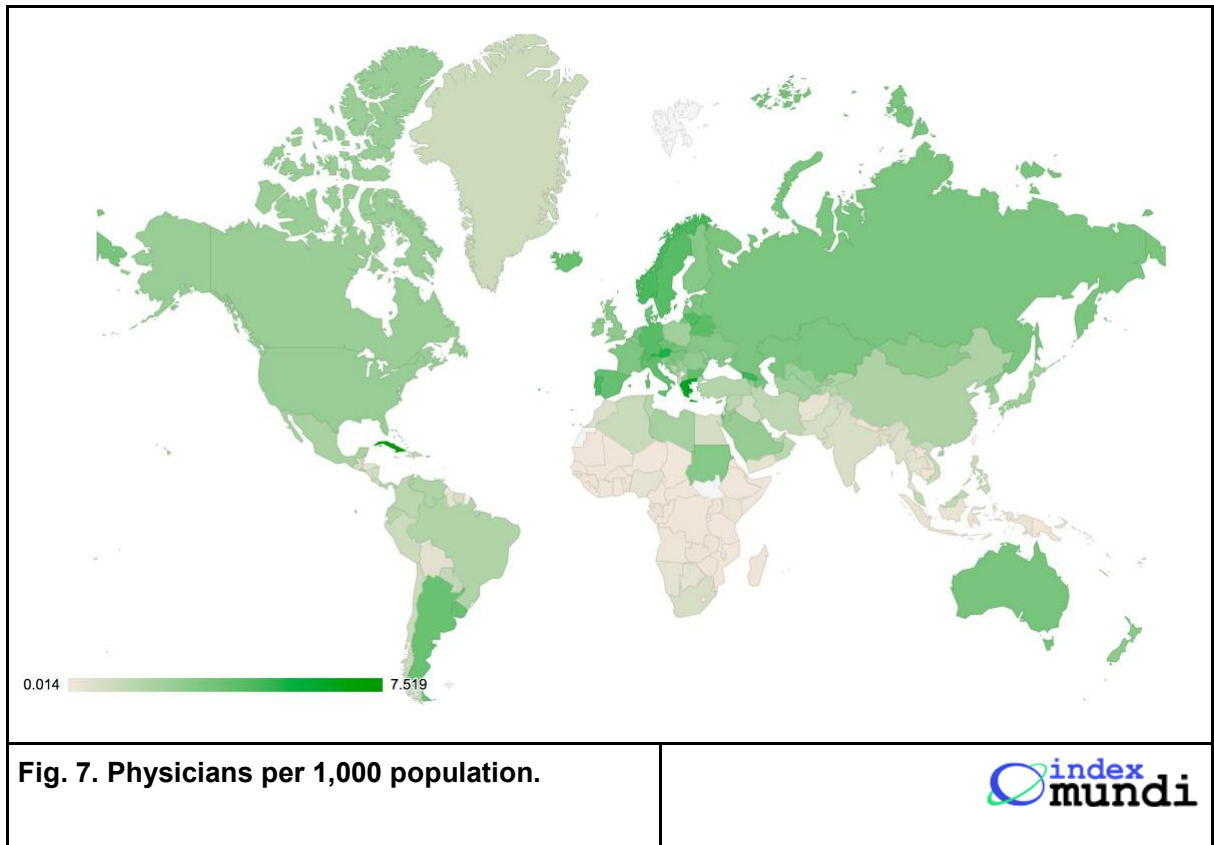
The equitable distribution of health workers has improved and made possible the achievement of UHC in Thailand. In 1979 the density of doctors was 1:1,210 residents of Bangkok and 1:25,713 in the rural North East; this 21-fold difference dropped to 5-fold by 2009. In 1970 the child mortality rate in Thailand was 87.9 per 1,000 live births; by 2016 it had dropped to 12.2. Life expectancy at birth has followed a similar trajectory: whereas in 1980 was 64 years, in 2016 it had increased to 75 years.

In summary, the Thai government had the political will and stewardship capacity to work toward UHC by strengthening their primary health care system and increasing the number and equitable distribution of their health workforce. They were pioneers in recognizing that health workers are critical to UHC. As a result of this long-term vision, the Thai people, in both urban and rural areas, now enjoy access for all to appropriate health services without financial hardship.

Wealthy countries have an abundance of experience from their own history of economic development and effective planning systems, although no one can claim a perfect blueprint or track record for HRH. While many of the problems that began at earlier development stages remain, the primary challenge faced by wealthier nations is the relentless increase in the cost of health care. While traditional analysis attributes this growth to aging populations with growing demands for NCD care and to the endless supply of technological innovations, an alternative explanation attributes the rise in costs to the relative inefficiency of health labor, as compared to other sectors. (See Text Box).

*The Cost Disease* is an economic theory that posits that certain sectors (e.g. health, education) cannot substitute capital for labor through technology as fast as others sectors (e.g. agriculture and manufacturing a century ago, supply chains and ICT more recently). As such, they are bound to experience inflation at a greater than average rate because the efficiency of those other sectors generates products and services at lower prices once the market demand has been met (which could be infinite for health and wellbeing). Thus, price increases generated (*and afforded* by the economic expansion resulting from productivity gains) are responsible for most of the relentless growth in health expenditures in the U.S. and elsewhere. The special nature of health labor, and society's desire for personal care and some degree of solidarity, are key to health economics.

A recent paper by *Papanicolas et al* (2018) compares the drivers of health spending in the U.S. with 10 other high-income countries. They show that the U.S. spends twice as much on health and yet other countries have 99-100% health insurance coverage and better health indicators. Despite the higher spending, the U.S. has utilization rates (e.g. hospitalization, drug prescriptions) largely similar to those of the other nations in the study. Further, the U.S. does not differ substantially in the density of nurses and doctors (and the average 43% dedicated to PHC), though both cadres receive higher salaries. The study found that the U.S. used 8% of its THE on administrative costs (from planning to billing) versus just 1-3% in the other countries. Ultimately, higher prices of labor and goods was the major reason for the differences in THE between the U.S. and the other countries.



Many optimists believe that the *Cost disease* can be overcome through technological innovation. Electronic health records, computerized decision-analysis and mobile phones have been helpful contributions to improving health system access, quality and efficiency.<sup>26</sup> Likewise, since 1990 there has been an explosion of the internet, new social media vehicles, artificial intelligence and machine learning, all of which have resulted in major improvements in health research, education and services. And yet, during this time the U.S. THE increased from \$700 Bn to \$3.5 Tn. This illustrates that technology alone cannot contain the fundamental social and economic forces driving the growth in health costs.

**Fig. 8. Health Care Jobs in America last decade grew 10 times faster than the rest.**

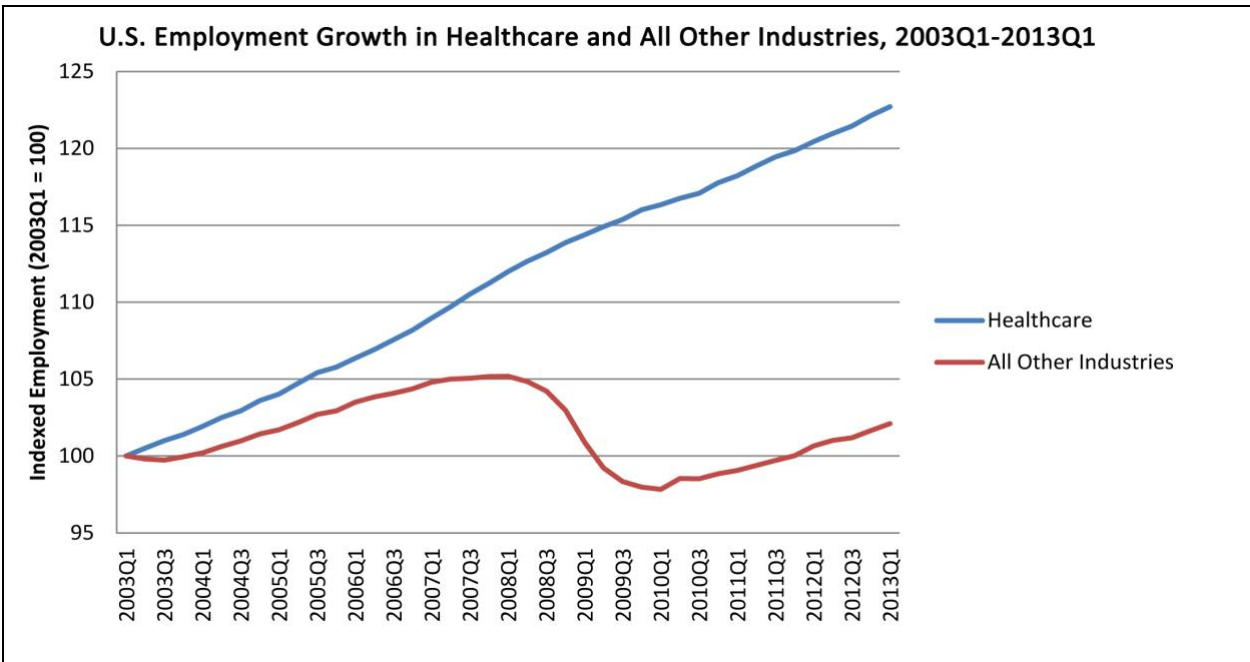


Figure 3 shows rich countries have a higher density of HRH and can afford a more expensive skill mix. In the USA, the number of health care jobs since 1990 have doubled; in particular, home health care and administrative staff expanded rapidly. Today, surpassing 10% of all jobs, health care has become the largest U.S. employer and is projected to account (with social assistance) for one third of all jobs in America by 2026.<sup>27</sup> Fruitless policy efforts to decrease health spending when economies are growing are compounded by the fact that elected officials do not want to cut a growing source of jobs in their districts – even after the recession of 2008. *But as long as other sectors deliver economic growth at cheaper prices, rich nations can and will afford the expected increase in health spending (which incorporates HRH) which should make the realization of UHC economically rational (as opposed to continuing to attempt to control THE to no avail).*



### ***Japan – the country with the highest health status of all OECD***

While World War II left Japan poor, it created a sense of solidarity followed by rapid economic growth that by 1961 enabled public insurance and universal health coverage. By the late 1970s, Japan overtook Sweden as the world's leader for longest life expectancy; today life expectancy at birth is 85. Japan's system is comprised of mainly private providers and modest cost sharing by patients. They currently spend 11% of their GDP on health and only 1% of that on administration and governance (the lowest among the 10 high income countries studied and is compared to 8% in the U.S.).

Armed with an explicit policy on HRH planning, supply-and-demand projections for doctors are based on biennial surveys. Student admissions into university medical faculties are regulated in line with future demand projections for doctors. From 2010 to 2012 the total number of health workers rose by 4.3%. In 2012, doctors density was 2.38:1000 people, slightly below the OECD average of 3.1. Further, their health system has 4.6 nurses per physician, which is the second to highest in all OECD countries. Approximately 75% of people employed in health-care are women (midwives must be female by law); the system is family friendly by providing parenting support and flexible work schedules.

The Japanese health system achieves relative equity in health service delivery between urban and rural areas, including remote islands and mountainous regions. The government has increased quotas for medical schools at regional universities and provides provider incentives. Governments also sponsor students with the agreement that after graduation they will work at a remote public hospital or facility. This has fostered geographically equitable access to services; doctor density in urban areas is 2.37:1000 people and similarly it is 2.39:1000 in rural areas.

## **HRH education is a pathway to working toward UHC**

Initial interest in HRH focused on addressing the deficit in health workers (the ILO's access deficit indicator suggests that more than 100 countries lack enough professional health workers), when in fact the quality of health professionals' education needed to be examined as a critical facet of HRH planning. Many experts recognize the supply side of training is broken in most LMICs. A historical look at health education reforms will enlighten future action.

In the early 20th century, three influential reports were released that formed the basis for modern medical, public health and nursing education. First, the 1910 *Flexner report* developed reforms on professional health education that integrated modern science into the health curricula of universities. The reforms taught health professionals a set of skills that in practice contributed to the doubling of life expectancy during the 20th century. Next, the '*Welsh Rose*' report was released in 1915. This report called for a national system of public health training and national institutes of hygiene that would be linked to medical schools.<sup>28</sup> These ideas served as the foundation for many of today's preeminent schools of public health in America and around the world – though some noted it may have led to a "schism" between Medicine and Public Health. Lastly, the *Goldmark report* advocated for improving the training for nurses by

housing these programs in universities.<sup>29</sup> Although the results of the implementation of the recommendations in these reports were mixed, they undoubtedly served to elevate the level of education for health professionals.

Fast forward 100 years and the health challenges of the 21st century are dramatically different. The demographic and epidemiological transitions have created a rise in aging populations, chronic conditions and mental illness and an increasingly complex health system. From a health systems perspective, there isn't enough focus on primary care, the disparities between the number of providers in urban versus rural settings are egregious and there's a lack of attention to the social determinants of health. All the while, the health development curricula has not been adjusted to better prepare health professionals to address these dramatic changes in the population's health profile and the way health systems are organized. Among the competencies that need to be developed are: patient-centered care, interdisciplinary team work, evidence-based practice, problem-based learning, continuous quality improvement, use of new technology, and most critically, the integration of population health. In addition to teaching students, there are other dimensions of an education system, including leadership, stewardship, accreditation, and communication skills that need attention.

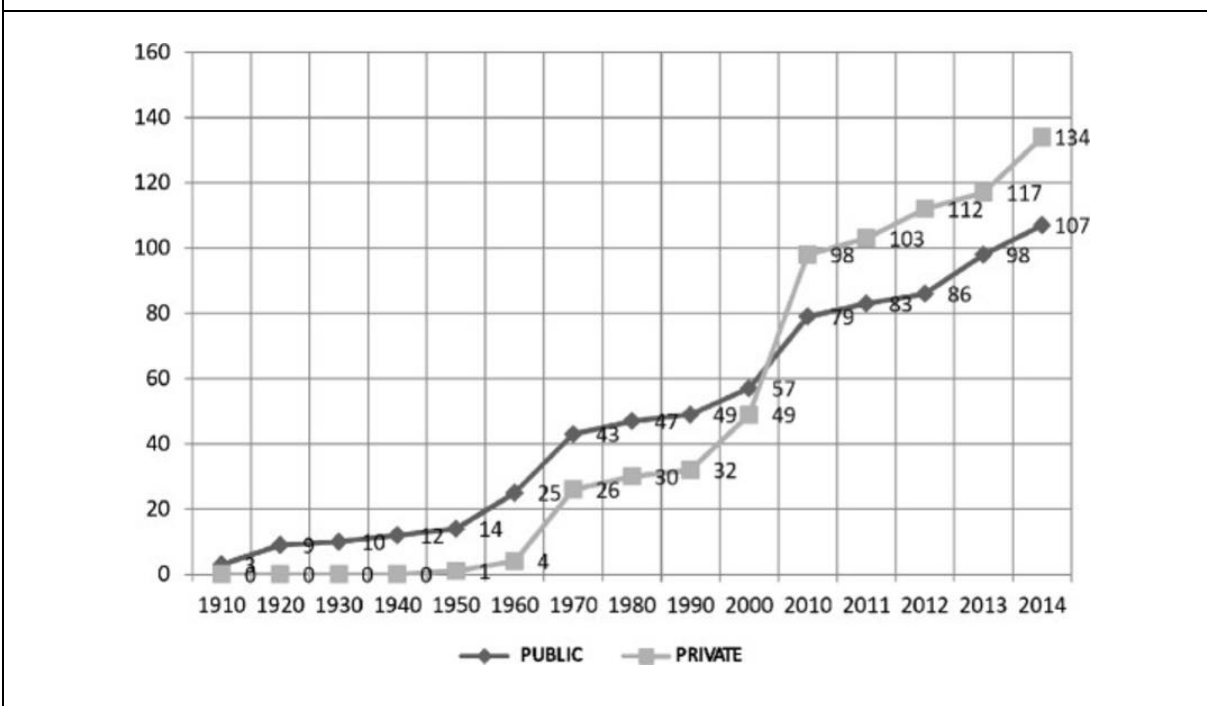
The number and distribution of medical schools illustrates the severity of the under-supply of health professionals in countries at all stages of development. Whereas China, India, Brazil, and USA each have more than 150 medical schools, 36 countries have no medical schools and 26 countries in sub-Saharan Africa have one or no medical school.<sup>30</sup> In recognition of this void, the NIH launched a series of Health Education Partnership Initiatives to support PEPFAR-funded institutions in Sub-Saharan Africa increase the number of new health care workers by 140,000; there is one on medical education (MEPI), one on nursing education (NEPI), and most recently one on health professionals (HEPI).<sup>31</sup> The last was introduced in an effort to advance PEPFAR's goal of. Another major effort on HRH education is the Asia Pacific Action Alliance on Human Resources for Health (AAAH) which is a 16-country partnership to strengthen country capacity for planning and action on the health workforce system.

A recent study estimates that total global health expenditure for health professional education is about US\$100 billion per year, which is less than 2% of total health expenditures worldwide.<sup>30</sup> This percentage is extremely low and doesn't account for massive differences across countries, but it does serve to illustrate the shortcomings of the field of HRH. As the economic transition takes place, social demand for health services increases and the subsequent need to educate more providers will be accelerated. Developing all levels of nurses is a response to this increased demand and in addition will have the triple impact of contributing to three of the Sustainable Development Goals – improving health, promoting gender equality, and strengthening economies.<sup>32</sup> Further, a special effort must be made to attract women to partake in training opportunities given that women are 51% of the world's population and they comprise the majority of health providers, especially nurses, midwives and community health workers.

However, if public financing does not keep pace with the response to this increased demand, market forces will take over and private universities will expand rapidly. For example, in 2014

Brazil had 241 medical schools which were able to accommodate 20,340 students, of whom 54% were enrolled in private higher education institutions.<sup>33</sup> Similarly, a 2014 report on medical schools in India found that 355 schools enrolled 44,250 students; of these schools, 195 were owned by the private sector (54.9%) which enrolled 24,205 students (54.7%) in the same year.<sup>34</sup>

Fig. 9. Public and private medical schools, Brazil 1910-2014.<sup>34</sup>



In response to the recognition that health education has not kept pace with the quantitative and qualitative demands for health providers, The Global Commission on Education of Health Professionals for the 21st Century was created. The Commission's ultimate purpose was to provide recommendations to prepare HRH as a critical pathway toward universal coverage of comprehensive health services, which is essential for health equity both within and between countries. The Commission viewed universities as pivotal actors in the health system and noted the tertiary education sector was wrongly marginalized during the decade-long focus of the Millennium Development Goals on primary and secondary education.

The Commission recommendations were published in The Lancet in 2010.<sup>30</sup> They focused on health professionals with post-secondary level of education and developed a set of 'instructional' and 'institutional reforms' for countries at all levels of development. The goal of the instructional reforms is 'transformative learning,' which is a shift from a traditional approach

whereby students memorize text books and provide episodic treatment toward teaching students to think critically, engage in team work, consider local priorities and social norms and become change agents. The Commission's institutional reforms suggest a health systems approach. This requires management leadership skills, as well as learning to work collaboratively within and across countries, to create alliances and networks for sharing educational content and innovative approaches to training HRH. Innovative pedagogies and team-based learning are indeed needed as demands and technology evolve, which was the subject of a recent workshop at the National Academies of Sciences, Engineering and Medicine.<sup>35</sup>

## **“Brain Drain”**

The departure of large numbers of health professionals from developing nations is a complex and often misunderstood problem, involving “push” and “pull” factors not routinely quantified. With growing international demand and attractive social, economic and academic benefits, the asymmetric gradients for migration are indeed strong. The vast majority of migrating physicians are headed to the US, UK, Australia, Canada and Germany, though several regional “carousels” exist. On the supply side, producing more health professionals than can be absorbed by the local system, and more generic issues of political and other crisis, exacerbate the structural gradients for migration. Pumping the supply of health workers can lead to unemployment and distortions away from primary care. In some cases, countries produce health workers with the intention to export them (remittances being an incentive); the Philippines is a good example, which nonetheless end up with more nurses than they would have if the demand for an ability to migrate weren't there. Individuals of course have the human right to seek opportunity and the freedom to move to other countries, despite recent restriction by protectionist governments (in the U.K., Brexit prospects have led 90% drop in foreign nurse applications – a self-inflicted wound to their National Health System).

The structural gradients for transnational migration, like those from rural to urban areas, have no easy solution. War is just one example, which in the 1940s created an exodus of European doctors. Lower income countries should train local lower end cadres that can be more efficient in providing primary care and are less likely to migrate. Many low to middle income countries prefer free, public education, and the investment is quite significant for doctors and nurses. Graduates may be required to serve for a few years in underserved communities, but this is patchy at best. Individuals may be required to payback the cost of education as a condition to emigrate, though this is rarely done (and many contribute much more through remittances). Asking recipient countries to compensate poor countries for the cost of the professionals they “poach” seems fair at first sight, but it is hard to define and accredit legitimate “buyers” and “sellers”, and historians would easily see the recreation of a “modern slavery” with such “markets” competing in price, etc.; generic ODA is a better form of “compensation”. The 2010 WHO code of practice on the international recruitment of health personnel attempted to bring fairness but has not stemmed the tide of migration.

Cross border migration has become more nuanced with economic development in recent decades. As countries reach middle-income levels, local conditions and opportunities become a deterrent for migration; Brazil and China come to mind. On the other hand, regional blocks are the advantages of open borders. The European Union professional card (EPS) was introduced in 2016 as a way for professionals to have their qualifications recognized in another E.U. country, including currently nurses and pharmacists but not physicians. In the regional movement toward ASEAN Economic Community (AEC), medical professions including physicians can be qualified to practice medicine in another country despite difference among member country systems through Mutual Recognition Arrangements. Regional blocks in Africa are experimenting with similar arrangements.

Socioeconomic and demographic gradients across the world will exist for the foreseeable future, and migration of health professionals is to be expected. These flows should be regulated and monitored, so as to optimize migration. Richer countries need to embrace and plan for a growing demand of health workers, poorer ones should build the foundation of their systems with community health workers, and middle income countries should demand some public service for free public education. ‘Poaching’ should be discouraged and transnational compensation should be indirect. The economic transition will bring many countries new capabilities and opportunities within that may attenuate the gradients for migration. Regional models offer empirical lessons where HRH levels may reach dynamic equilibriums in the production and employment of health workers. In the end, ‘brain drain’ has not been an insurmountable obstacle to the progressive realization of UHC.

## Conclusions and recommendations

Health workers are the brains, heart and hands of the health system. Global evidence has shown higher HRH density to be associated with lower maternal and infant mortality. Likewise, insufficient HRH contributes to poor health outcomes as illustrated in the recent spread of Ebola in West Africa where there is an acute shortage of health workers. HRH has been critical to the success of the HSS movement and is considered a pillar and driver of the global movement for UHC.

Globally, WHO estimates there are approximately 60 million health workers worldwide. Their density and skill-mix varies across regions and there is a near universal urban-rural maldistribution. By 2030, global demand for health workers will rise to 80 million workers while the supply of health workers is expected to reach only 65 million over the same period, resulting in *a worldwide net shortage of 15 million health workers*.<sup>36</sup>

Early analytical approaches to HRH advocated for a rigid minimum density of doctors and nurses to provide life-saving services, ignoring the dynamic nature of labor markets as countries move up the development ladder. To achieve UHC, countries need a dynamic plan for HRH that accounts not only for higher densities, but also a transition in the skill mix of cadres to meet evolving demands afforded by the economic transition of health. In addition to 'pumping the supply of HRH,' good leadership and better stewardship capacity are essential to optimize investments in HRH for the progressive realization of UHC. We suggest the following:

Universal health coverage is not about spending more money, it's about organizing whatever resources you have at each stage of development in the most equitable and efficient way. Human resources follow the same pattern: as health spending grows with GDP, the density of health workers grows and the types and distribution of health workers evolves. Planning ahead is essential for this special labor market.

- In low-income countries, UHC can only be realized by using locally trained CHWs to deliver basic PHC and other essential population-level interventions, while building a range of cadres for diverse and evolving needs.
- In middle-income countries, the capacity for health systems stewardship (governance, information, financing and HRH) is insufficient and should be a priority for governments, international donors and technical agencies working to advance UHC.
- As long as their economies grow, rich nations can and will afford the expected increases in health spending and HRH, planning for which (rather than attempts to control it and fail) should make the realization of UHC economically rational.

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